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United States Department of Agriculture,

BUREAU OF ANIMAL INDUSTRY.—Circular No. 97.

A. D. MELVIN, Chief of Bureau.

Washington, D. C., July 31, 1906.

SIR: In view of the widespread interest taken in the cattle-tick question at this time and its important bearing on the cattle industry of the South, it is considered timely to issue the following brief directions on the subject of ridding cattle and premises of the Texas-fever tick, and I recommend their publication as a circular of this Bureau.

If the southern farmers will but make a united effort along the lines indicated and thus cooperate with the local officials and this Bureau in attacking the tick problem, much headway will be made, and our ultimate aim—namely, the entire eradication of the tick and its direful consequences to southern agriculture—will be within measurable distance of accomplishment.

This circular is especially applicable from midsummer until the following April to localities where but few cattle are kept, and it is intended as a handy supplement to the former publications of this Bureau on the subject of Texas fever and the cattle tick, the most recent of which are Bulletin No. 78 and Farmers' Bulletins Nos. 258 and 261.

Respectfully,

A. D. MELVIN,
Chief of Bureau.

Hon. JAMES WILSON,
Secretary of Agriculture.

HOW TO GET RID OF CATTLE TICKS.

The destruction of ticks which are on cattle and premises is the first step in procuring a free cattle traffic. The following suggestions are therefore made for the purpose of assisting owners of small numbers of ticky cattle to get rid of the fever ticks:

The term "ticks" as here used is especially applied to the fever tick (*Boophilus annulatus*). (See fig. 1). These ticks are the more abundant in the latter part of summer and fall, the other kinds being rarely present after the month of July. All ticks are harmful, however, and should be destroyed.

The term "cattle" should be understood to include all cows, steers, bulls, heifers, yearlings, calves, and oxen.

Tick-free premises are those in which there have been no ticky animals for nine months previously.

THE HAND PICKING AND GREASING METHOD.

Cattle and premises may be freed from ticks by hand picking the cattle even though they are allowed to run on ticky premises, provided they are controlled and no other animals are permitted on the premises. The method of hand picking and greasing is most suitable in cases where there are but few animals or for small herds where the conditions for grazing can not be changed. The method consists in carefully examining all the cattle daily and picking or scraping off the ticks. In this connection it must be remembered that horses and mules sometimes carry ticks, and therefore these animals must also be thoroughly and frequently examined and the ticks removed. The greatest care must be exercised to collect and destroy all of the ticks removed. It is true that while this process is going on the animals will get more ticks on them if the premises are ticky, but by diligently destroying all the larger ticks the supply finally gives out on account of the seed ticks having perished.

Arrange to examine all the cattle and pick the ticks at least every other day. All parts of the animals, especially the insides and back parts of the thighs, should be examined for ticks. If any of the cattle are difficult to handle, they should be driven into a chute or narrow pen made for the purpose and where good light is afforded. Ticks can be seen best in sunlight. Ticks must not be thrown on the ground, but should be placed in tin cans or other convenient vessels and carried to a suitable place and burned or otherwise totally destroyed, or they will lay eggs, and seed ticks will hatch in countless numbers. *Begin now to pick ticks and be sure that not a single tick matures on your cattle after September 1.* As a result of your trouble in observing the precautions herein indicated during this summer and fall, the cattle and premises should be free from ticks by April 1.

To assist in preventing ticks from getting on cattle the cattle may be greased at the time of picking or as often as may seem to be necessary. The greasy solution is obnoxious to the ticks, and if the legs and sides of the animals are treated in this manner, the ticks will be less apt to crawl on them.

In greasing cattle, use Beaumont crude petroleum or any crude oil, cotton-seed oil, fish oil, or lard. The following mixture will be found useful for this purpose: One gallon of kerosene, one gallon of cotton-seed oil, and one pound of flowers of sulphur. Any of the above may be applied with a sponge, swab, or brush, and should be thoroughly rubbed on all the lower parts of the cattle and at least halfway up their bodies.

THE TIE-ROPE OR PICKETING METHOD.

This method is practicable where there are only a few head of cattle. It consists merely in picketing the cattle out on tick-free

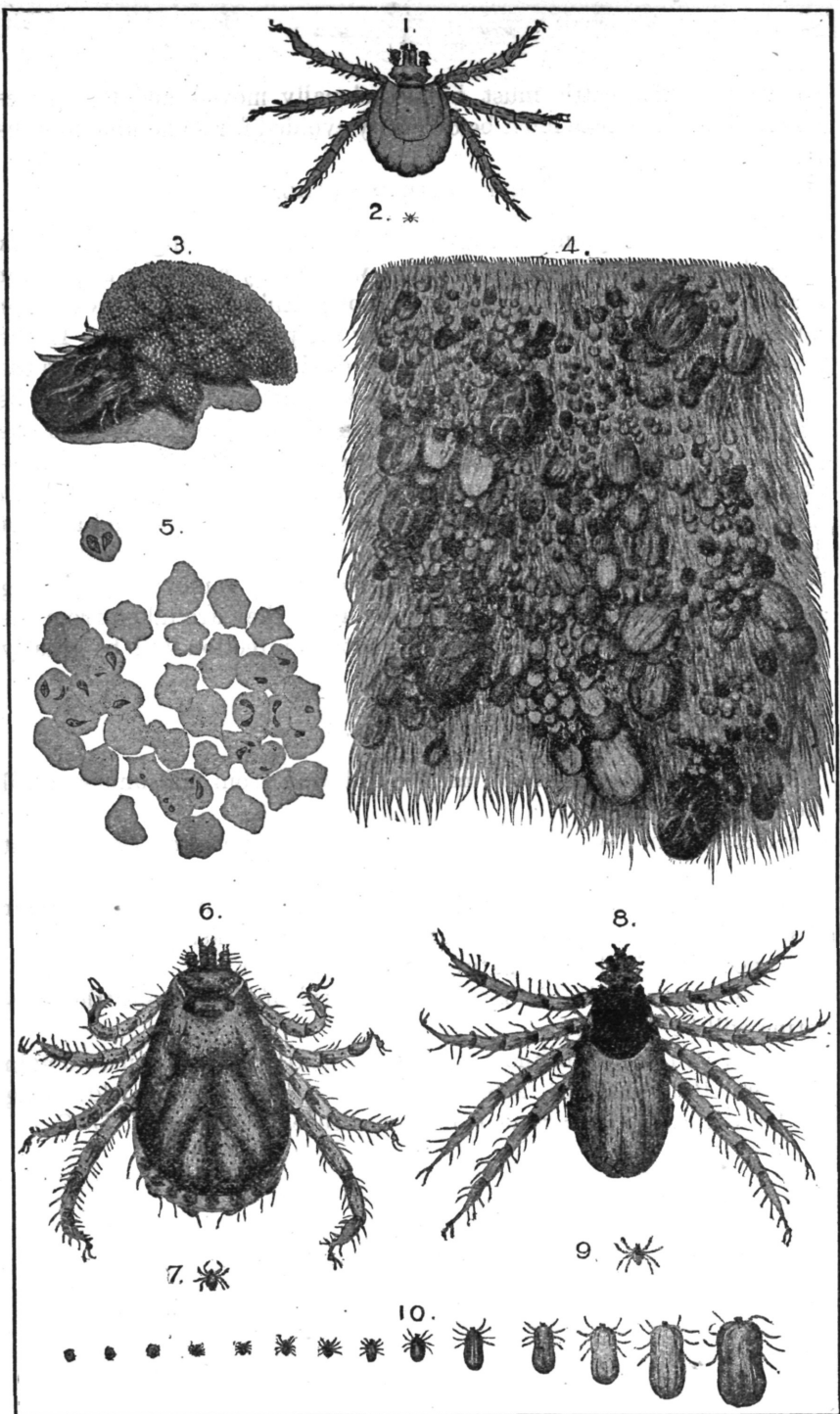


FIG. 1.—Texas-fever protozoa and the ticks which transmit them.

1, larva of fever tick ($\times 25$); 2, same (natural size); 3, mature female and eggs; 4, hide showing cattle ticks; 5, blood cells containing Texas-fever protozoa ($\times 1,000$); 6, male cattle tick ($\times 15$); 7, same (natural size); 8, young female cattle tick ($\times 15$); 9, same (natural size); 10, various stages of cattle ticks.

pasturage. The cattle must be occasionally moved and the places where they have been must be carefully avoided for some nine months thereafter.

THE TWO-FIELD METHOD.

On or before September 1 remove all cattle (including young stock and calves) from the pasture or range where they are to be kept after March 15 of the following year. Do not permit any cattle, horses, or mules on such pasture or range during the period indicated. If the premises in which the cattle are placed during this period adjoins the pasture or range where they are to be kept after March 15 it will be necessary to set the dividing fence over some 10 or 20 feet on the pasture at the time of changing the cattle in March. *Be sure to examine every head of cattle carefully for ticks before changing them in March.* If ticks are present on the cattle at this time and are not destroyed the pasture will become infected and the work will have to be done over again. If the ticks are frequently removed by picking and the cattle are greased immediately after they are taken from the pasture in September, the danger of future infection will be greatly lessened.

CONCLUSION.

Any of the above methods may be followed from midsummer until the following April.

Select the method best suited to your conditions and carry it out vigorously. Help your neighbor to do the same.

Be sure that no other cattle pass over the premises where your cattle go unless the other cattle are kept free of ticks.

Do not let a single tick mature after September 1.

If everyone will do his part in getting rid of ticks the cattle quarantine will be removed.

Should you desire to know more about cattle ticks you may obtain Farmers' Bulletins Nos. 258 and 261 on the subject by addressing the United States Department of Agriculture, Washington, D. C.